Applicants' invention relates to the mathematical representation of a problem. Applicants' invention, in clear contrast to Schwuttke et al., deals with the visualization of the mathematical representation, in grid or matrix form, and not in cyberspace, of a mathematical expression. One reading the description of Applicants' invention, particularly one skilled in the art, readily understands the nature of Applicants' invention. For example, the introduction to the example of Applicants' invention starting on page 12 reads "Matrices are useful constructs both in theoretical and applied mathematical analysis."

Is not a mathematical representation of a problem (i.e., Applicants' invention) different from a three dimensional picture of a space (i.e., Schwuttke et al.)? Are not the purpose and function of Applicants' invention different from the purpose and function of Schwuttke et al.?

- Claims 1, 2, 5, 6, 9, 13, and 14 each call for

"generating a grid based on a plurality of data values"

and

Claims 3, 7, 11, and 15 each call for

"extracting a plurality of data values associated with a mathematical matrix to generate a geometric representation"

Is not Applicants' grid, that is generated as a direct result of data values rather than data values being located in the grid subsequent to formation in an arbitrary manner as in the Schwuttke et al. grid, different from the Schwuttke et al. grid which is the result of an arbitrary division of cyberspace into smaller spaces that is not based on a plurality of data values, although data values are subsequently located within the grid?

For a prior art reference to anticipate a claim under Section 102, each and every element, feature and detail specified by the claim must be found in the reference. Citations in support of this principle are unnecessary.

Claims 1 through 3, 5 through 7, 9 through 11, and 13 through 15 have been rejected under Section 102(e) as being anticipated by Schwuttke et al. When it was argued by Applicants, in the Response dated August 1, 2001, that in Applicants' invention:

(a) as defined by claims 1, 2, 5, 6, 9, 13 and 14, the grid is generated as a direct result of data values, rather than data values being located in the grid subsequent to formation, in an arbitrary manner, of the grid as in Schwuttke et al., and

(b) as defined by claims 3, 7, 11, and 15 the mathematical matrix in Applicants' invention is generated as a direct result of data values, rather than data values being located in a matrix subsequent to formation, in an arbitrary manner, of the matrix as in Schwuttke et al.,

the Examiner responded simply by stating "Schwuttke distinctly discloses (col. 6-7 et seq.) the grid being formed as a result of object classification. Additionally, Applicant's specification distinctly discloses at pg. 4, ll.16 et seq. and pg. 6, ll.13 et seq. that the shapes are placed on a grid."

When it was argued by Applicants, in the Response dated October 12, 2001, that:

(a) Schwuttke et al. does not disclose that a grid is defined only after data has been entered into the space occupied by the grid at selected locations in this space, so that so that the grid is defined at the time the data is being entered as in Applicants' invention, and

(b) in Schwuttke et al., as in other prior art grids, the grid is defined at locations within the coordinate system whether or not data has been entered, whereas in the present invention, the grid is defined only at coordinates where the data is located,

the Examiner responded simply by stating "Schwuttke et al. and the present invention function the same in that both define a grid where the data is entered, with Schwuttke teaches placing data values in the grid, but allowing grouping of data to determine relationships (col. 6, line 63 through col. 7, line 35)." (The completion of the reference to the relevant columns and lines of Schwuttke et al. was given to Applicants' attorney by telephone by the Examiner on December 20, 2001.)

When one reads the portions of Schwuttke et al. to which the Examiner has made reference, one learns how Schwuttke et al. is arranged. It is not apparent, from a reading of the cited portions of Schwuttke et al., that Schwuttke et al. discloses each and every element, feature and detail specified by the claims that have been rejected under Section 102(e) as being anticipated by Schwuttke et al. The Examiner must point out where, in Schwuttke et al., there is a disclosure of:

(a) "generating a grid based on a plurality of data values" as called for by claims 1, 2, 5, 6, 9, 13, and 14

and

(b) "extracting a plurality of data values associated with a mathematical matrix to generate a geometric representation" as called for by claims 3, 7, 11, and 15.

General statements, such as "Schwuttke distinctly discloses (col. 6-7 et seq.) the grid being formed as a result of object classification" and "Schwuttke et al. and the present invention function the same in that both define a grid where the data is entered," fall short of what is required before the claims can be rejected. Because it is not apparent, from a reading of the cited portions of Schwuttke et al., that Schwuttke et al. discloses each and every element, feature and detail specified by the claims, such statements should be supplemented by the Examiner pinpointing precisely where, in the referenced portions of Schwuttke et al., each and every element, feature and detail specified by the claims is disclosed. Also, such general statements fail to take into consideration the whole of the relevant portions of the claims (i.e., all the details and features of the elements of the claims).

Applicants believe that if the Examiner specifically addressed their points of argument, set forth previously and repeated in this Preliminary Amendment, the Examiner will conclude that

(a) the limitation in claims 1, 2, 5, 6, 9, 13, and 14 of

"generating a grid based on a plurality of data values"

and

(b) the limitation in claims 3, 7; 11, and 15 of

"extracting a plurality of data values associated with a mathematical matrix to generate a geometric representation"

make clear that, in the present invention, there is no definition of a grid into which data is entered without the data values upon which the grid is generated and that this is patentably different from Schwuttke et al.

Respectfully submitted,

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The Assistant Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. 09-0456 (IBM Corporation) of any fees associated with this communication.

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office (Fax No. (703) 308-6606) on the date shown below.

Lisa M. Cooper

January 7, 2002